PIONEER®
The Art of Entertainment

Operating Instructions
Manual de instrucciones
操作說明書

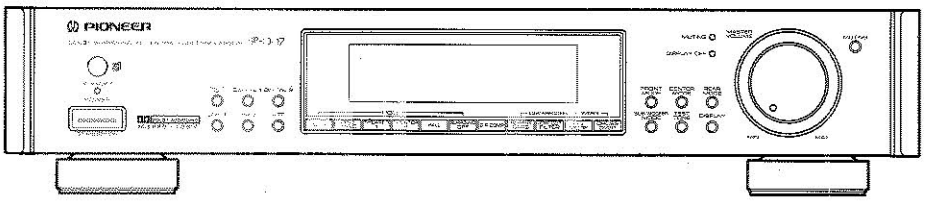
SP-DO7

DOLBY SURROUND AC-3 & PRO LOGIC PROCESSOR
PROCESADOR PRO-LOGIC Y SONIDO ENVOLVENTE DOLBY AC-3
杜比身歷聲AC-3及杜比邏輯處理器

English

Español

中國語



Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

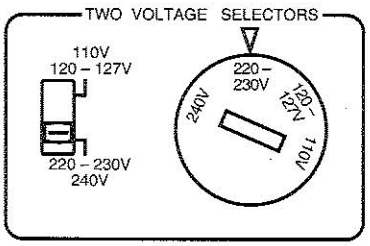
CAUTION:
This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

THE POWER SWITCH IS SECONDARY CONNECTED AND THEREFORE DOES NOT SEPARATE THE UNIT FROM MAINS POWER IN STANDBY POSITION.

TWO VOLTAGE SELECTOR SWITCHES

Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with a 110 V setting in Saudi Arabia.
The line voltage selector switches are on the rear panel. Check that they are set properly before plugging the power cord into the household wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switches as follows.

1. Use a medium-size screwdriver.
2. First, insert a screwdriver in the groove of the voltage selector at the right, and adjust so that the tip of the groove points to the voltage value of your area.
3. Next, insert a screwdriver in the groove of the voltage selector at the left and adjust until the voltage is the same as at the right.



IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.

— Increase the separation between the equipment and receiver.

— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

— Consult the dealer or an experienced radio/TV technician for help.

Information to User
Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

FEATURES

■ **This unit is a processor enabling Dolby AC-3 decoding for reproduction ranging from mono to discrete 5.1 ch, and Dolby Surround Dolby Pro Logic decoding.**

The following three kinds of SFC (Sound Field Control) effects can also be added to these modes and through signals:

- **THEATER 1** : SFC providing the sound field of a movie theater.
- **THEATER 2** : SFC providing the sound field of a movie theater. (Provides a more mellow sound than THEATER 1.)
- **HALL** : SFC providing the sound field of a concert hall.

■ **Other major functions:**

- **Dynamic Range Compression**
  When the command for dynamic range compression of the original signal is specified by the AC-3 source or another component on the source side, the decoder's DSP (Digital Signal Processor) compresses the dynamic range of the playback audio signal for an audibly improved SN (Signal to Noise) ratio. When OFF, the original signal level remains unchanged.
- **Features two dual-purpose AC-3/SPDIF digital inputs.**
- **Analog 3-1 input compatibility**
  Multi audio input compatibility, with control of master volume, balance, and other settings possible. Also features regular analog inputs for two channels.
- **Equipped with SUPER BASS for boosting AV source low-range frequencies.**

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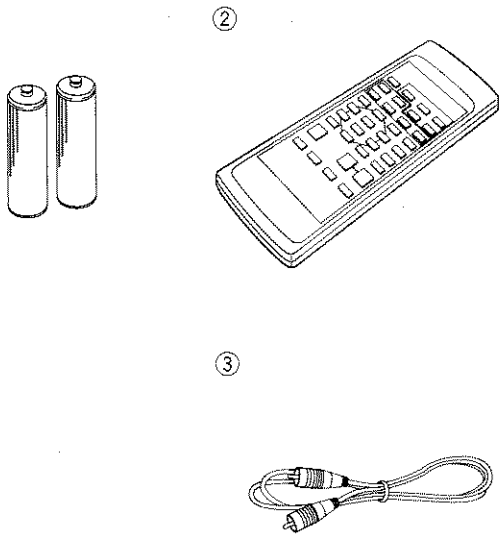
1



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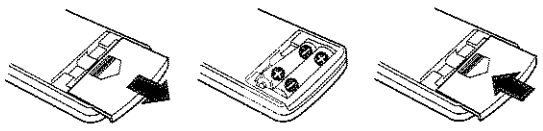

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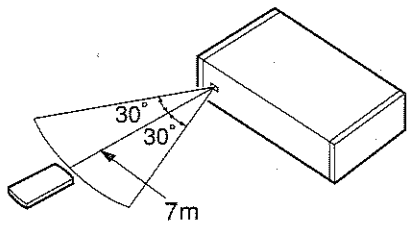


BEFORE USE

■ Check the accessories ([1])

① Dry cell batteries (size AAA/R03) 2
② Remote control unit 1
③ AC-3/RF cord 1

■ Loading the remote control unit with batteries. ([2])

1. Open the cover of the battery case on the back of the remote control unit by pushing in the direction indicated by the mark while pressing.
2. Take both of the supplied AAA/R03 batteries and insert as shown in the battery case.
3. Close the cover of the battery case.

Using the batteries incorrectly may cause them to leak or burst. Pay careful attention to the following points.

1. Insert the two batteries making sure that they are aligned with the polarity markings in the battery case.
2. Don't use a new battery with an old one.
3. Batteries of the same size may have different voltages, so don't use different kinds of batteries together.

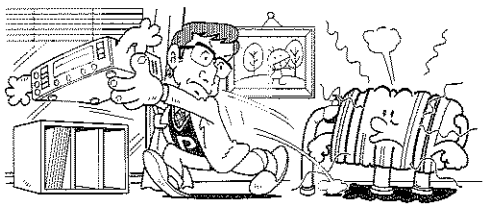
Range of operation of the Remote Control Unit ([3])

The remote control unit can operate the main unit within a distance of 7 meters and within an angle no more than 30 degrees off-axis from the infrared receiver.

CAUTIONS REGARDING HANDLING

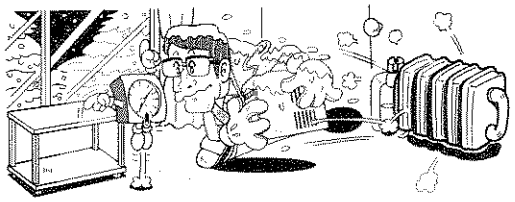
LOCATION

Install the unit in a well-ventilated location where it will not be exposed to high temperatures or humidity.
Do not install the unit in a location which is exposed to direct rays of the sun, or near hot appliances or radiators. Excessive heat can adversely affect the cabinet and internal components. Installation of the unit in a damp or dusty environment may also result in a malfunction or an accident. (Also avoid installation near cookers, etc., where the unit may be exposed to oily smoke, steam or heat.)
Do not install the unit on an unstable or inclined surface.

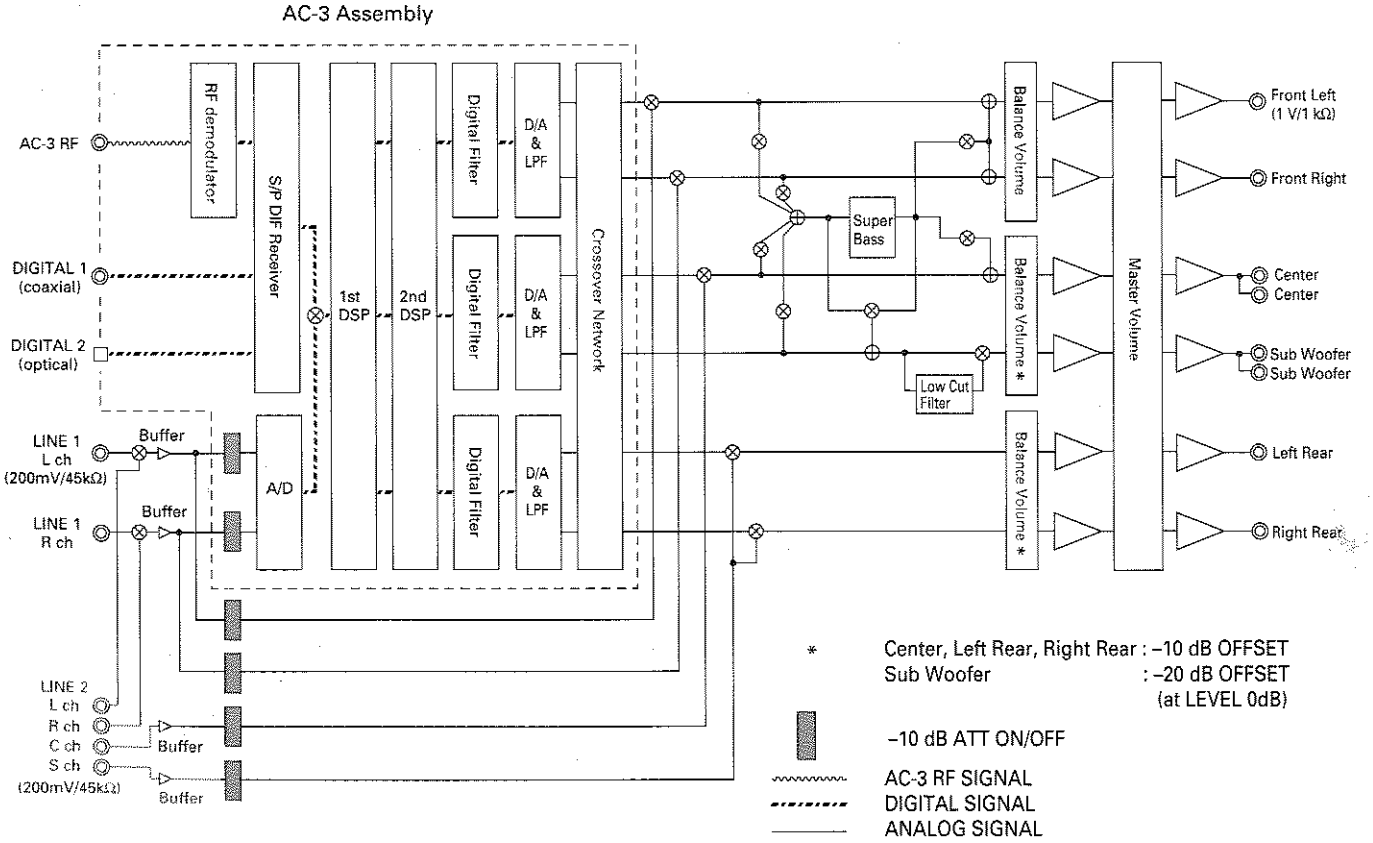


CONDENSATION

When this unit is brought into a warm room from previously cold surroundings or when the room temperature rises sharply, condensation may form inside and the unit may not be able to attain its full performance. To prevent this, allow the unit to stand for about an hour before switching it on or raise the room temperature gradually.



BLOCK DIAGRAM/DIAGRAMA DE BLOQUES/系統組構圖



SURROUND AND SFC (Sound Field Controller) EFFECT

This unit has a built-in surround processor for adding presence and an expansive effect to the sound.

3 Sound Field Modes:

THEATER 1:

The feeling of movement and outstanding stereo imaging, together with an atmosphere of a movie theater assure an incredible ambience.

THEATER 2:

Reproduces a movie theater atmosphere like THEATER 1, but with a more mellow sound.

HALL:

You can enjoy a convincing hall sound.

DOLBY PRO LOGIC SURROUND:

Choose this setting for movies and music (especially video discs and video tapes bearing the DOLBY SURROUND mark) playback. DOLBY PRO LOGIC SURROUND continuously detects the size and direction of the dominant signal and cancels undesirable crosstalk, thereby providing signal emphasis.
It makes you clearly perceive the directional source of the music. Real flow of sound also can be re-created naturally using this feature. You can feel as if being in an outstanding and expansive sound field.

DOLBY 3CH LOGIC:

Select "NONE" with the speaker setting REAR MODE button, press the DOLBY PRO LOGIC button ON and DOLBY 3CH LOGIC is selected.
Combining the rear speaker signal with that of the front speakers results in your being able to enjoy a regenerated sound field which has comparatively more presence and a more expansive feeling from the front 3 channels (front L, front R, and center speakers) than that of ordinary stereo regeneration. DOLBY 3CH LOGIC can be used with stereo sources not encoded with DOLBY SURROUND.

DOLBY AC-3:

Choose this setting for movies and music (especially video discs bearing the DOLBY SURROUND AC-3 DIGITAL mark) playback. The LaserDisc player's AC-3 RF OUT jack must be connected to this unit's AC-3 RF IN jack.

AC-3 is the compression format used when recording 6-channel audio onto the digital track of film for the SR D (Surround Digital) movie theater surround system. To enable AC-3 to reproduce the same multi-track audio in the home on laserdisc, the six independent audio channels compressed by the AC-3 system are recorded on the right analog stereo channel. Among these six channels, the sub-woofer signal (SW) is exclusively for low-range reproduction. Since this SW signal is not really necessary as far as the total system is concerned, the number of channels is expressed as 5.1.

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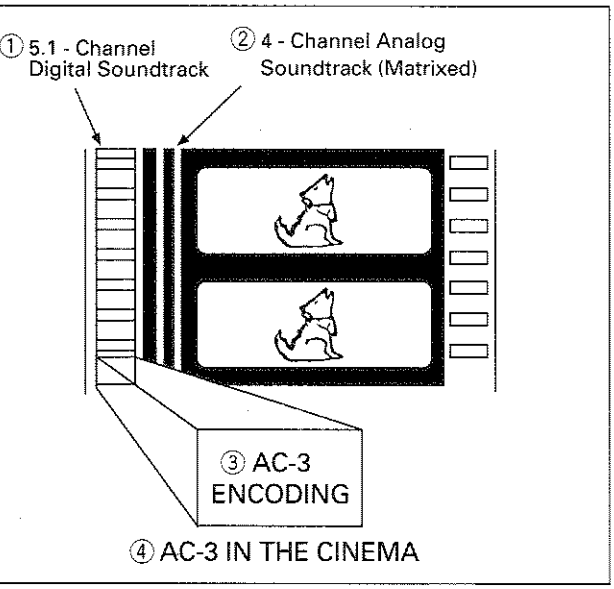
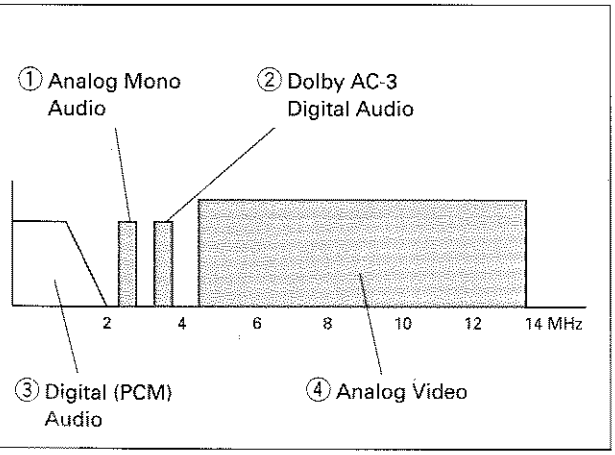


) 5.1-pista de sonido digital de canal
) 4-pista de sonido analógico de canal (matricial)
) CODIFICACION AC-3
) AC-3 EN EL CINE

① 5.1聲道數碼聲軌
② 四聲道聲軌(矩陣)
③ AC-3編碼
④ 電影院的AC-3



) Audio Monofónico Analógico
) Audio Digital Dolby AC-3
) Audio Digital (PCM)
) Video Analógico

① 數碼(傳統脈沖編碼調制)音頻
② 杜比AC-3數碼音頻
③ 類比單聲音頻
④ 類比視頻

DOLBY SURROUND AC-3

Dolby Laboratories spearheaded home theater with the introduction of Dolby Surround, and then defined it with the follow-up format of Dolby Pro Logic Surround. They have continued the evolution of home theater with the introduction of Dolby AC-3 Pro Logic, a Multi-Channel Digital delivery system. Just as Dolby Surround found it's beginnings in the cinema, so does AC-3. This advanced multi-channel digital sound, although originally conceived for and later chosen for HDTV, made it practical to implement in the cinema because it enabled the film to retain the analog soundtrack. With backwards compatibility a priority so the film could be played in any cinema, it was decided to place the new digital optical track between the sprocket holes, which was a key factor in defining its maximum practical bit rate (see illustration).

In 1992 Dolby Surround Digital, the film sound format with AC-3 as its keystone, made its debut in the cinema. In less than three years, more than 300 feature films had been released in this new format. Furthermore, AC-3 can now be brought to the consumer's home today via the LaserDisc.

Traditional Pulse Code Modulation (PCM), which is utilized on compact discs and LD's 4-channel matrixed digital audio tracks, uses a 16-bit word to "describe" the sampled point in the original analog wave. By sampling this analog wave 44,100 times per second for each channel, the system will yield a dynamic range of 96 dB from the loudest sound to the noise floor. However, this process creates an immense amount of data which is too large for multi-channel systems. Thus, a form of data reduction must be employed to reduce the total amount of information without serious degradation of the sound quality — hence the introduction of AC-3.

The premise of AC-3 is simple, it reproduces the full bit resolution (16-bit) when a lower resolution will not result in the same sound quality. However, when a lower resolution is acceptable, it will utilize this lower resolution opting instead for psychoacoustical theories and digital noise filtering technologies to help insure acceptable sound quality.

THE LASERDISC FORMAT

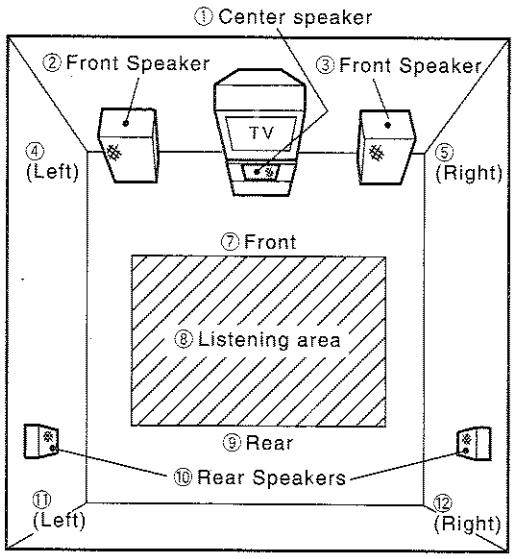
The one major concern when the idea of including another form of audio on a laserdisc was .... Backwards Compatibility. It would not do the laser disc format any justice, especially in a time of growing acceptability, to change the audio system without considering those consumers that had already purchased a LaserDisc player. Thus to maintain backward compatibility, the AC-3 encoding was deemed to be stored in one of the existing analog tracks.
The diagram below shows the format of the AC-3 Pro Logic laserdisc. The PCM audio track, containing the 4-channel matrixed digital soundtrack, was fully maintained for continued use in LaserDisc players with digital capabilities. As mentioned above, one of the analog channels will now contain the AC-3 encoding, while the other analog channel will contain a mono analog soundtrack, which still provides backwards compatibility with those pre-1984 LaserDisc players (1984 was the year we introduced an LD player with digital capabilities).

THE ADVANTAGES OF AC-3 OVER PRO LOGIC

AC-3 is called a 5.1-channel system because it provides 5 independent channels (left, right, center, left surround, and right surround), all reproducing in the 20 – 20,000 Hz range. In addition, the system provides for an independent sub-woofer channel, which is called a low frequency effects channel.
Use of the low frequency effect channel is optional, since the 5 channels provide a full frequency bandwidth, but available for those consumers wishing to include a sub-woofer for thunderous bass reproduction. Furthermore, AC-3 provides improved channel separation, multi-directional discrete capability, and increased sound-design creative flexibility (for the movie makers). Below highlights some of the other advantages of Dolby AC-3:

	DOLBY SURROUND DIGITAL (AC-3)	DOLBY PRO LOGIC SURROUND
Available Channels on Disc	5.1 Channels	2 channels
Playback Channels	5.1 Channels	4 channels
Description of Playback Channels	Left, Right, Center, Left Surround, Right Surround, and Sub-woofer	Left, Right, Center, and Surround
Sound Processing	Discrete Digital AC-3 Encoding & Decoding	Analog Matrix Processing for Dolby Surround
Surround Channel Maximum Frequency Response	20,000 Hz	7,000 Hz
Other Information	- 5 Discrete Channels - Fully Backward Compatible with Dolby Surround - High Dynamic Range - Extremely Accurate and Natural Sound for Vocals and Effects Imaging	

4



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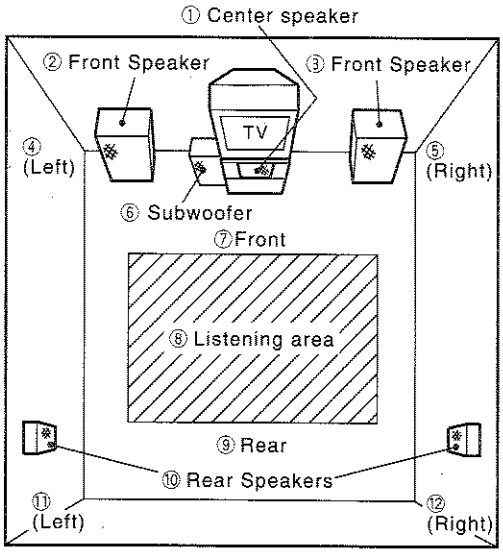


① Altavoz delantero
② Altavoz central
③ Altavoz delantero
④ (izquierdo)
⑤ (derecho)
⑥ Altavoz de grave secundario
⑦ Parte delantera
⑧ Area de audición
⑨ Parte trasera
⑩ Altavoces traseros
⑪ (Izquierdo)
⑫ (Derecho)

① 中級揚聲器
② 前級揚聲器
③ 前級揚聲器
④ 左
⑤ 右
⑥ 超低音喇叭
⑦ 前
⑧ 賞聽區
⑨ 後
⑩ 後級揚聲器
⑪ 左
⑫ 右

PLACING THE SPEAKERS

For the best sound field control effect, set up your speakers as shown in the figure below.

Example of a Basic Setup (4)

Placing the center speaker between two widely spaced front speakers assures much clearer orientation of speech or vocals.

NOTE:

- *Speakers placed very close to a TV should be magnetically shielded.*
- *Place the left and right speakers at equal distances from the TV.*
- *When using only one center speaker, place it above the TV. If you place it at the side of the TV, the sound and the picture may not seem quite synchronized.*
- *It is more effective if the rear speakers and front speakers are positioned slightly above ear level.*
- *It is recommended you use amplifiers and speakers that are matched in output and efficiency.*

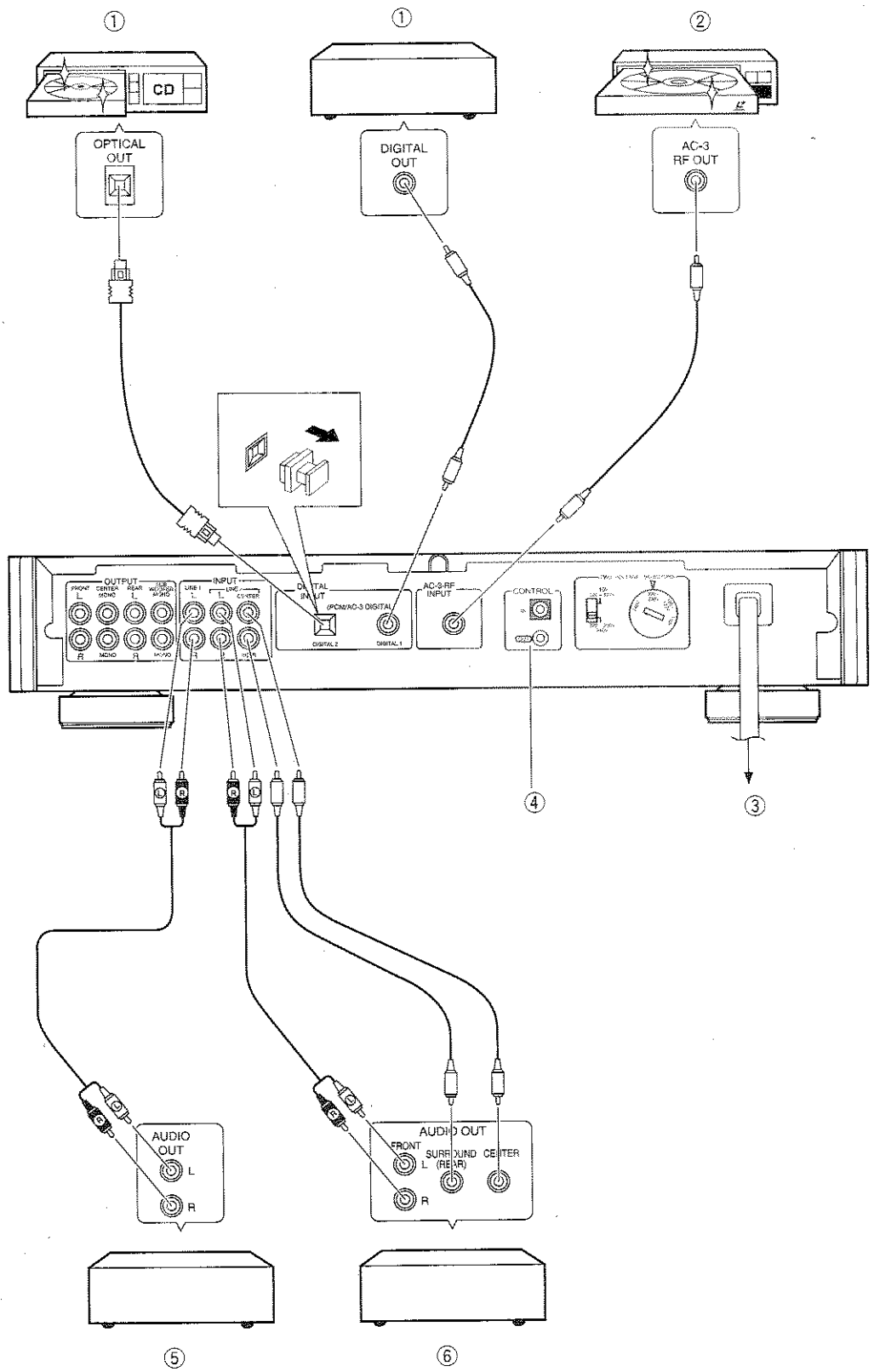
Example of an Expanded Setup (5)

CONCERNING THE LISTENING ROOM

The best effect cannot be obtained from this unit if there are too many sound reflections in the room. If your room suffers from this problem, take the following measures:

- In a room where sound reflections and vibrations are easily generated, use thick woolen curtains or try moving furniture to different positions.
- In a room with hard, rigid walls or glass doors, prevent generation of reflections and standing waves by using thick woolen curtains.

6


①
①
②
CD
OPTICAL OUT
DIGITAL OUT
AC-3 RF OUT
OUTPUT
INPUT
DIGITAL IN
AC-3-RF INPUT
CONTROL
④
③
AUDIO OUT
AUDIO OUT
FRONT
SURROUND (REAR)
CENTER
L
R
⑤
⑥

Before making or changing the connections, switch off the power switch and disconnect the power cord from the AC outlet.

1. INPUT CONNECTIONS (6)

① Components such as a CD player or LaserDisc player, or components with an AC-3 digital output.
② LaserDisc player or other component with an AC-3 RF output.
③ AC wall socket
④ See page 24.
⑤ Audio playback components.
⑥ Audio components with front/center/rear outputs (such as an amplifier).

Antes de hacer o camblar las conexiones, desconecte el interruptor de alimentación y desconecte el cable de alimentación de la toma de CA.

1. CONEXIONES DE ENTRADA (6)

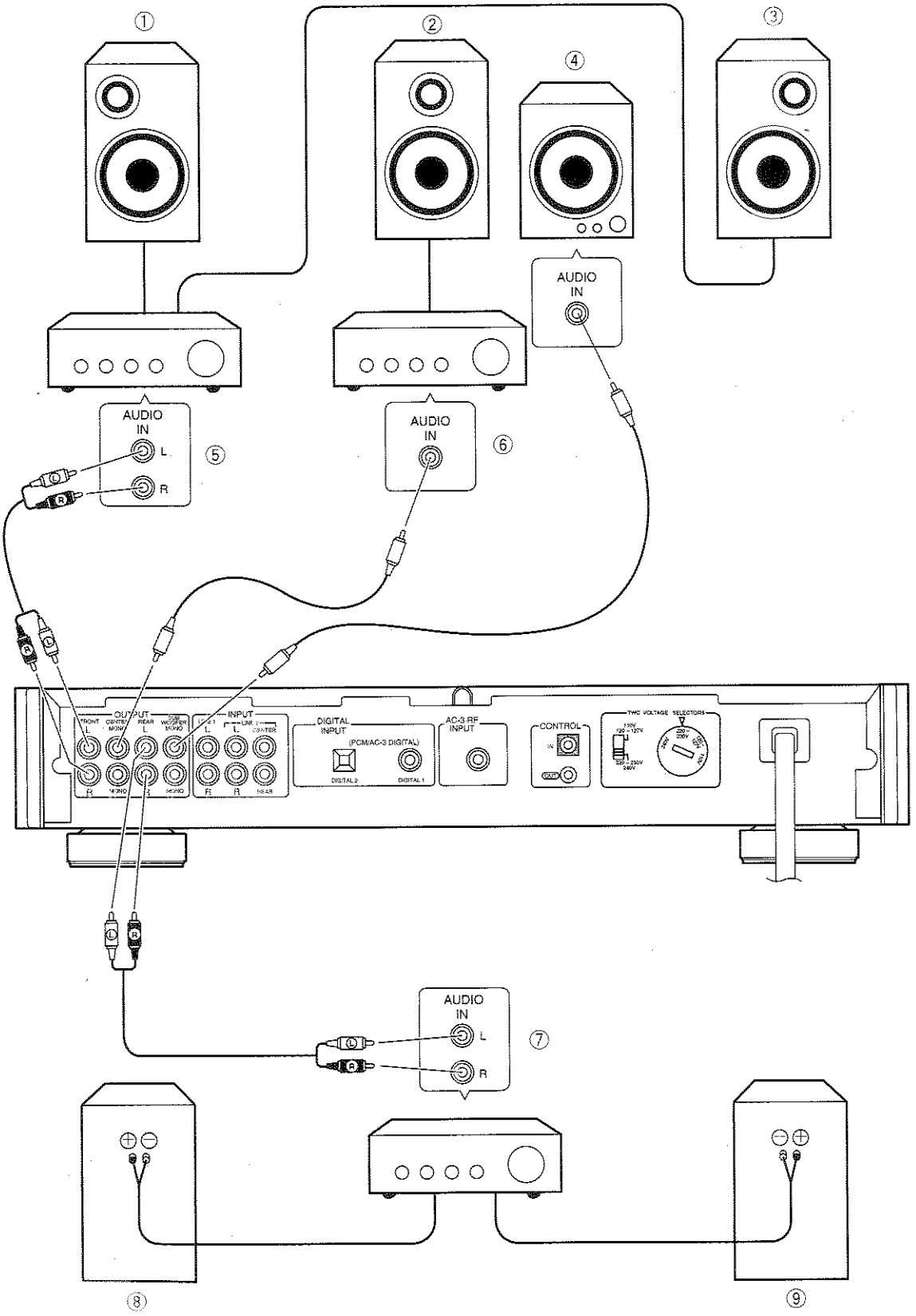
① Componentes tales como un reproductor de disco compacto o reproductor de disco láser, o componente con una salida digital AC-3.
② Reproductor de disco compacto u otro componente con una salida RF AC-3.
③ Tomacorriente de pared de CA
④ Vea la página 25.
⑤ Componentes de reproducción de audio.
⑥ Componentes de audio con salidas delantera/central/trasera (tales como la de un amplificador).

在操作或改變接駁之前，須關閉電源開關，將電源線從電源插座上拔下。

1. 輸入接駁程序(6)

① 鐳射唱碟機或鐳射影碟機等元件或設有AC-3數碼輸出端的其他元件。
② 鐳射影碟機或設有AC-3射頻輸出端的其他元件。
③ 交流電牆插座。
④ 請參閱第25頁。
⑤ 音頻重播元件。
⑥ 設有前/中/後級輸出端的音頻元件(例如放大器)。

7


①
②
③
④
AUDIO IN
AUDIO IN
L
R
⑤
AUDIO IN
⑥
OUTPUT
INPUT
DIGITAL INPUT
(PCM/AC-3 DIGITAL)
AC-3 RF INPUT
CONTROL
TWO VOLTAGE SELECTORS
AUDIO IN
L
R
⑦
⑧
⑨

2. OUTPUT CONNECTIONS (7)

① L
② C
③ R
④ Active Sub-woofer
⑤ Front L, R Power amplifier
⑥ Center Power amplifier
⑦ Rear Power amplifier
⑧ Rear L
⑨ Rear R

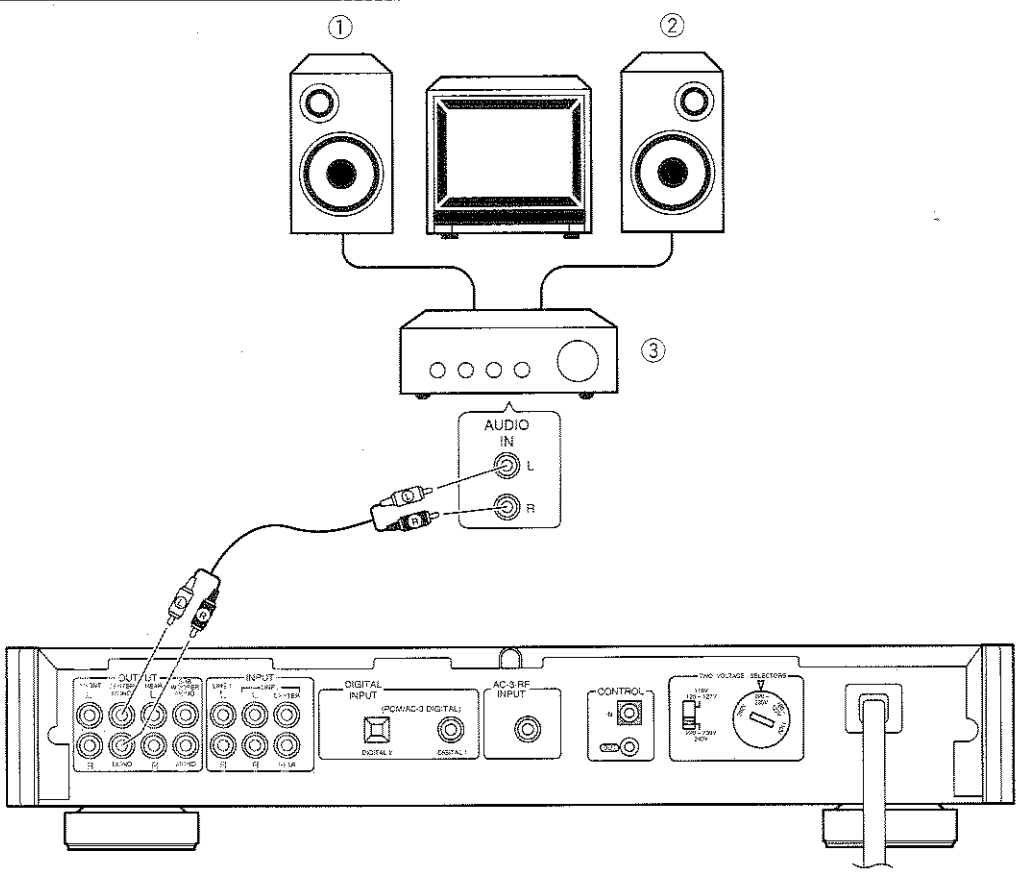
2. CONEXIONES DE SALIDA (7)

① L
② C
③ R
④ Altavoz de graves secundario
⑤ Amplificador de potencia delantero izquierdo y derecho
⑥ Amplificador de potencia central
⑦ Amplificador de potencia trasero
⑧ Trasero izquierdo
⑨ Trasero derecho

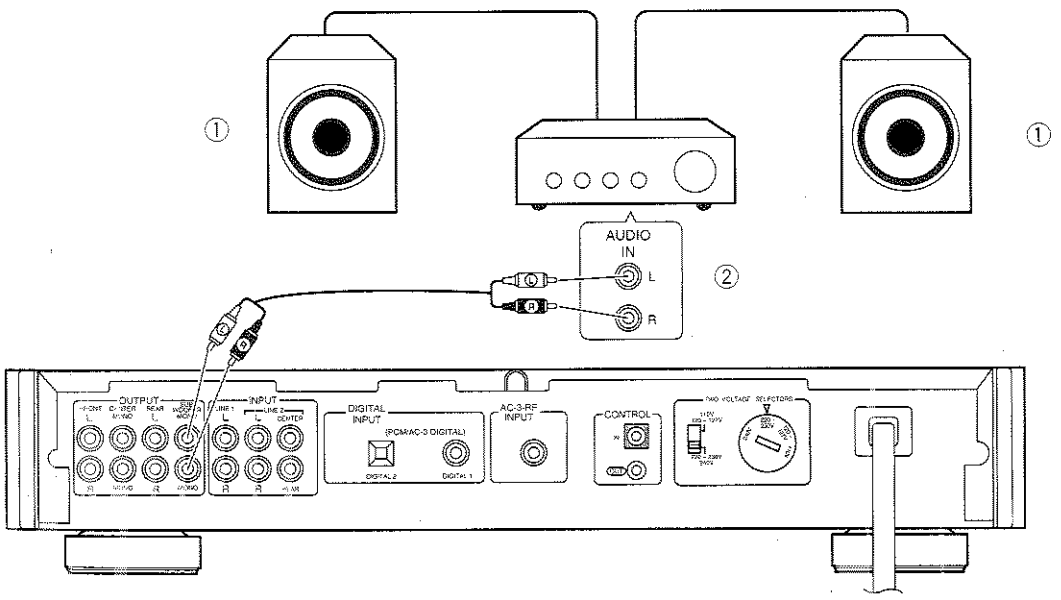
2. 輸出接駁程序(7)

① 左
② 中級
③ 右
④ 活用超低音喇叭
⑤ 前級 左、右功率放大器
⑥ 中級功率放大器
⑦ 後級功率放大器
⑧ 後 左
⑨ 後 右

8


①
②
③
AUDIO
IN
L
R
OUTPUT
INPUT
DIGITAL
INPUT
(PCM/AC-3 DIGITAL)
DIGITAL 2
DIGITAL 1
AC-3 RF
INPUT
CONTROL
IN
OUT
TWO VOLTAGE SELECTORS

9


①
①
②
AUDIO
IN
L
R
OUTPUT
INPUT
DIGITAL
INPUT
(PCM/AC-3 DIGITAL)
DIGITAL 2
DIGITAL 1
AC-3 RF
INPUT
CONTROL
IN
OUT
TWO VOLTAGE SELECTORS

Connecting Two Center Speakers for Dual Center(8)

There are two sets of terminals for center speakers on the main unit, so you can connect two speakers. When you cannot install a speaker under or behind your TV, installing speakers either side of the TV as a center speaker is just as effective.

1 L
2 R
3 Center Power amplifier

Connecting Two Sub-Woofers(9)

This unit features two jacks for sub-woofer connection. For a sound field with more powerful bass, connect two sub-woofers. Using two sub-woofers is particularly effective when viewing movies with combat scenes or explosions.

① Sub-woofer
② Sub-woofer's Power Amplifier

Conexión de dos altavoces centrales para centro doble(8)

Existen dos juegos de terminales para los altavoces centrales en la unidad principal, de modo que puede conectar dos altavoces. Cuando no puede instalar un altavoz debajo o detrás de su TV. Instalando los altavoces a cualquier lado del televisor como un altavoz central es perfectamente efectivo.

1 L
2 R
3 Amplificador de potencia central

Conectando dos altavoces de graves secundarios(9)

Esta unidad presenta dos tomas para la conexión de un altavoz de grave secundario. Para un campo de sonido con graves más poderosos, conecte los dos altavoces de graves secundarios. El uso de los dos altavoces de graves secundarios es particularmente efectivo para ver películas con escenas de combate o explosiones.

① Altavoz de grave secundario
② Amplificador de potencia de altavoces de graves secundario

接駁兩個中級揚聲器產生雙中級效果(8)

本機裝有兩套中級揚聲器終端，可讓您接駁兩個揚聲器。假若不可以在電視機之下或背後擺放揚聲器，可放在電視機任何一側，中級揚聲器效果同樣出色。

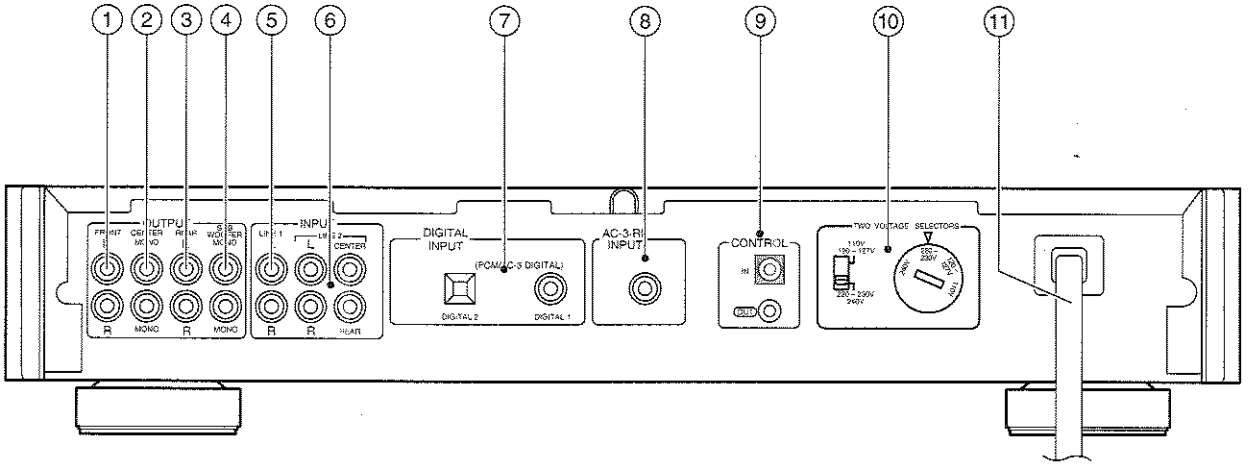
1 左
2 右
3 中級功率放大器

接駁兩個超低音喇叭(9)

本裝置特設兩個超低音喇叭接駁插頭。如要音場的低音更圓渾，可接駁兩個超低音喇叭。兩個超低音喇叭的效果在欣賞電影打鬥或爆炸場面時特別宏偉。

① 超低音喇叭
② 超低音喇叭功率放大器

PANEL FEATURES AND FUNCTIONS



REAR PANEL

① FRONT OUTPUT jacks
Connect to a stereo amplifier's input jacks.

② CENTER OUTPUT jacks
These are used as front center output. Connect to the amplifier used to drive the center speakers. It is possible to use only one channel.

③ REAR OUTPUT jacks
Connect to the audio input jacks of the stereo amplifier used to drive the rear speakers.

④ SUB WOOFER OUTPUT jacks
If you want to boost the low frequencies or playback the Dolby AC-3 surround LFE (Low Frequency Effect) channel, connect to a sub-woofer power amplifier.

⑤ LINE 1 INPUT jacks
Connect to a stereo amplifier's audio output jacks (such as an adaptor output or tape deck recording output).

⑥ LINE 2 INPUT jacks
Connect to a component with front L, R, center and rear audio output jacks.

⑦ DIGITAL INPUT jacks
Connect to a CD player or other component having digital outputs.
Future components can be connected with AC-3 (DIGITAL) audio outputs.

⑧ AC-3 RF INPUT jack
Connect to an LD player's AC-3 RF OUT jack.

⑨ CONTROL IN/OUT jacks
This jack is for centralized control of multiple components bearing the PIONEER mark using the remote control sensor of a single component.

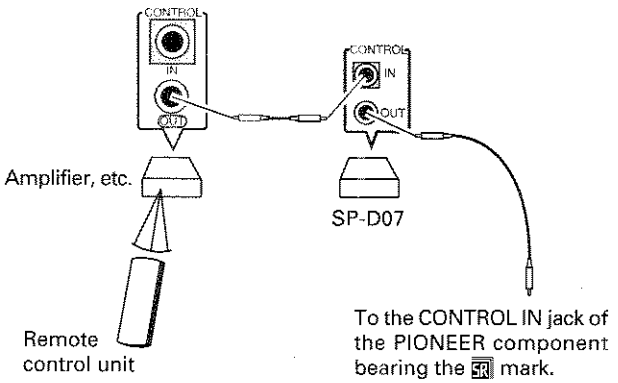
IN : Connect to the CONTROL OUT jack of components bearing the PIONEER mark.

OUT : Connect to the CONTROL IN jack of components bearing the PIONEER mark.

You can operate a component connected with the CONTROL OUT jack only by pointing the remote control at its sensor window.

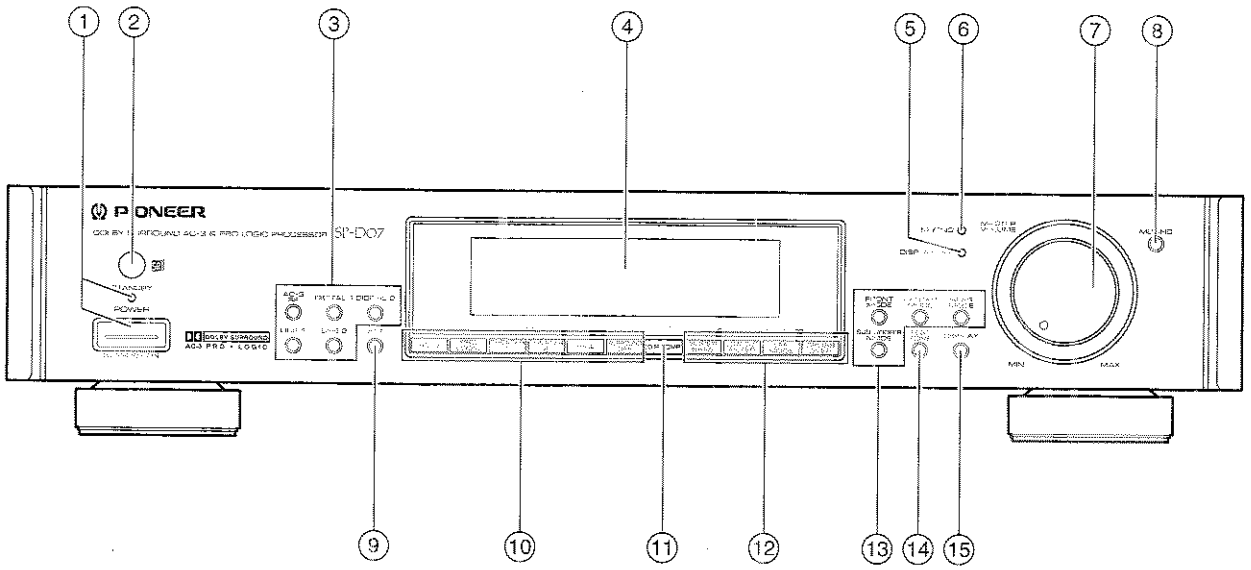
NOTE:

The remote sensor of components connected with the IN jack will not function. Operate by pointing the remote control at the remote sensor of a component connected with the CONTROL OUT jack only.



⑩ TWO VOLTAGE SELECTOR switches
See page 1.

⑪ Power cord



FRONT PANEL

① POWER STANDBY/ON switch and STANDBY indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
The STANDBY indicator lights during standby.

After switching power ON, there is no sound for about five seconds. During this time, the STANDBY indicator flashes.

② Remote sensor

③ Input selector buttons

AC-3 RF : Press when playing an AC-3 (Dolby Surround Digital) compatible disc on a LaserDisc player connected to the AC-3 RF INPUT jack.

DIGITAL 1 : Press when playing a component connected to the DIGITAL 1 INPUT with a coaxial cable.

DIGITAL 2 : Press when playing a component connected to the DIGITAL 2 INPUT with an optical fiber cable.

LINE 1 : Press when playing components connected to an amplifier that's connected to the LINE 1 jacks.

LINE 2 : Press when playing components connected to an amplifier that's connected to the LINE 2 jacks.

④ Display section (see page 30)

⑤ DISPLAY OFF indicator

This lights when DISPLAY is off.

⑥ MUTING indicator

This flashes when MUTING is on.

⑦ MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center, rear, and sub-woofer speakers.

⑧ MUTING button

Press to temporarily stop sound output. Press again to resume listening.

⑨ ATT (Attenuator) button

Press on, and audio input sensitivity is attenuated (–10 dB) to prevent clipping due to excessively high input levels. Switch this on if the overload indicator in the display section lights during playback. When you switch it on, the ATT indicator lights.

⑩ Surround/SFC Mode buttons

AC-3:
This operates only when you select DIGITAL 1 or DIGITAL 2 with the input selector buttons.
Pressing this button lets you switch between a component with an AC-3 digital audio output*1 and a component with another digital audio output, such as a CD player or LaserDisc player.

PRO LOGIC:
Switches DOLBY PRO LOGIC SURROUND on/off.
When you select AC-3, it does not operate for auto select.

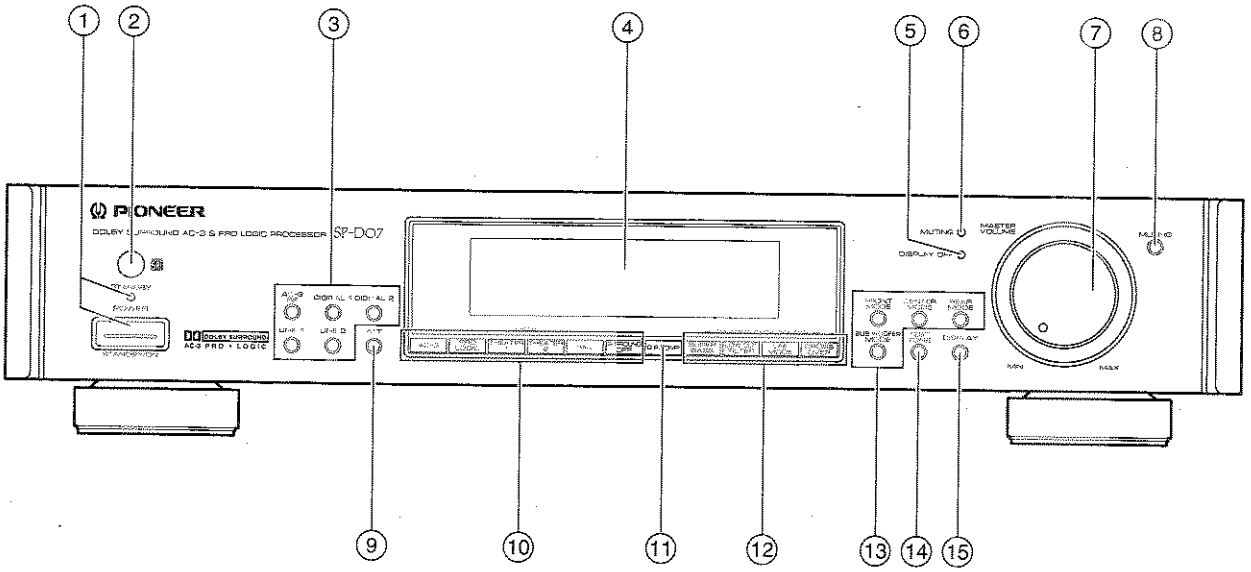
THEATER 1, THEATER 2:
Select when viewing video software. THEATER 2 provides a more mellow sound than THEATER 1.

HALL:
Select for concert hall ambience when enjoying music or other sources.

SURROUND OFF:
Switches surround mode (including DOLBY PRO LOGIC) off.

NOTE:
This unit features a function for memorizing surround/SFC mode settings for each input function. This lets you store surround/SFC mode settings you often use for each function.

*1 You will be able to connect this unit to future components with AC-3 digital outputs.



⑪ D.R.COMP (Dynamic Range Compression) button

When the command for dynamic range compression of an AC-3 source's original signal has been specified, press this button and this unit compresses the dynamic range for an audibly improved SN ratio.

NOTE:

When the command for dynamic range compression of an AC-3 source is not specified, or during playback other than AC-3, the original signal level remains unchanged even if you press this button.

⑫ Low Frequency Control buttons

SUPER BASS:

Press this button when you want to boost the bass.
Frequencies in the 100 Hz and below range are boosted.

LOW CUT FILTER:

This improves the sub-woofer sound by cutting frequencies in the 40 Hz and below range. (This enables bass boosting while reducing the possibility of the sub-woofer clipping.)

LFE (Low Frequency Effect) MODE:

Sets the sub-woofer LFE channel attenuation level.
The setting changes as follows each time you press it:

→ +10 dB → 0 dB → OFF →

The recommended level for Dolby surround is +10 dB.

NOTE:

If you set to "+10 dB", front three channels (L + R + C) output power is required for the sub-woofer. If this is more power than the sub-woofer can handle, clipping may occur resulting in distortion.

CROSSOVER*2:

Use to set the crossover frequency.
The setting changes as follows each time you press it:

→ 100 Hz → 150 Hz → 200 Hz →

*2 Crossover

This function is convenient when a speaker is too small to reproduce low range frequencies, or when there is no sub-woofer connected. The low range frequencies that cannot be reproduced (80 to 100 Hz or lower), or sub-woofer signals, are automatically rerouted to connected speakers that can reproduce low frequencies within a set range. With the CROSSOVER button you can select the low frequency range below which signals are distributed to different channels.

⑬ Speaker setting buttons

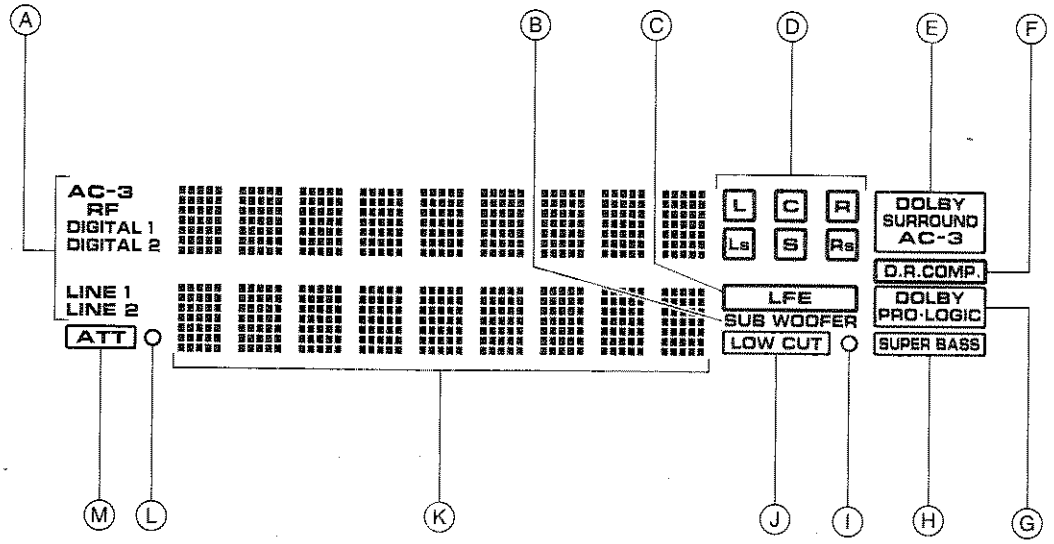
Set the size of the connected speakers and whether speakers are connected or not. (Refer to page 34.)

⑭ TEST TONE button

Switches test tone output used for adjusting the volume level of each channel (except the sub-woofer) on/off.
It does not operate when surround is off.

⑮ DISPLAY button

Switches the display section on/off. When switched off, the ⑤ DISPLAY OFF indicator lights.



DISPLAY SECTION

Ⓐ Input selector indicator
The input source selected with the input selector lights.

Ⓑ SUB WOOFER indicator
Lights during speaker mode setting.
This lights when you set the SUB WOOFER MODE to "USE", or "Mode 1, 2 (AC-3)".

Ⓒ LFE indicator*3
During Dolby AC-3 mode operation, if the LFE (Low Frequency Effect) channel is set in the program source, "LFE" lights, and if there is an LFE signal, a frame " ▭ " lights.

Ⓓ Dolby AC-3 channel indicators*3
During Dolby AC-3 mode operation, the channel set in the program source is indicated.
- **During speaker mode setting:**
  Indicates speaker size, and whether speakers are present or not.
- **During TEST TONE:**
  Indicates the channel for TEST TONE output, and the channel outputting the TEST TONE.

Ⓔ DOLBY SURROUND AC-3 indicator
During Dolby AC-3 mode playback, this lights when the audio format includes surround channels.

Ⓕ D.R.COMP (Dynamic Range Compression) indicator
Indicates that the D.R.COMP is on.

Ⓖ DOLBY PRO LOGIC indicator
During Dolby AC-3 mode playback, this lights when the source is Dolby Pro Logic encoded.

Ⓗ SUPER BASS indicator
Indicates that the SUPER BASS is on.

Ⓘ LFE MODE indicator
When in the LFE MODE, this lights when 0 dB or OFF is selected.
It goes out when the recommended +10 dB for Dolby is selected.

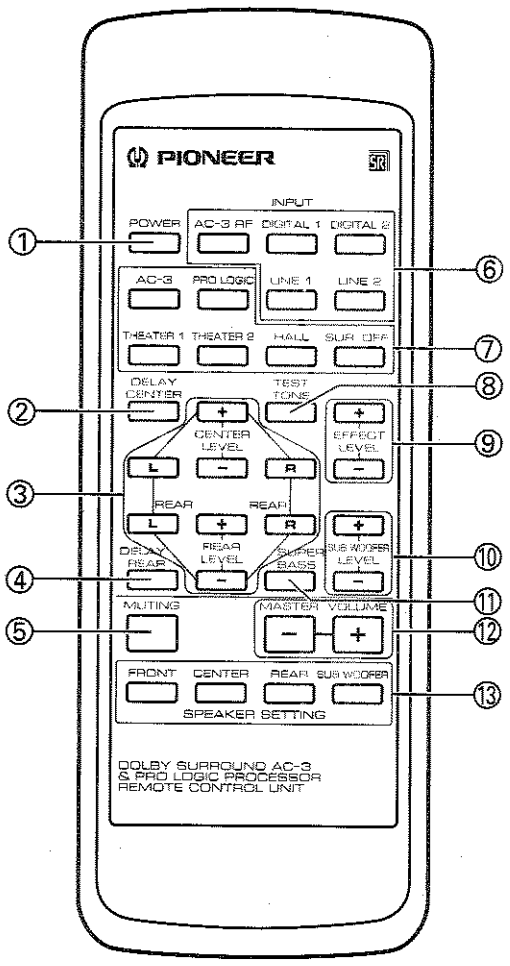
Ⓙ LOW CUT indicator
Indicates that the LOW CUT FILTER is on.

Ⓚ Character indicator

Ⓛ Overload indicator
This lights when input signal level is excessive.
If it lights during playback, press the ATT button on and the ATT indicator lights.

Ⓜ ATT indicator
Indicates that the input attenuator is on.

*3 Indicators Ⓒ and Ⓓ light or go off automatically depending on the audio format, if present, of the signals of each of the channels recorded on the software. They are called program audio format indicators.



REMOTE CONTROL UNIT

① POWER button

② DELAY CENTER button
Use to set center channel delay time.

③ Surround balance and level adjustment buttons
Use to adjust left/right balance and volume level of each channel.

- L R ..... Adjust Master balance
- REAR L R ..... Adjust rear L, R balance
- CENTER LEVEL + − ... Adjust center channel volume level
- REAR LEVEL + − ..... Adjust rear channel volume level

④ DELAY REAR button
Use to set rear (surround) channel delay time.

⑤ MUTING button
Press to temporarily cut out sound.

⑥ Input selector buttons

⑦ Surround/SFC mode buttons

⑧ TEST TONE button
Use to switch test tone output for volume level adjustment of each channel on/off.

⑨ EFFECT LEVEL (+, −) buttons
Use these buttons to adjust levels during surround mode operation with Sound Field Control. You can adjust in 11 steps between 0 and 10.

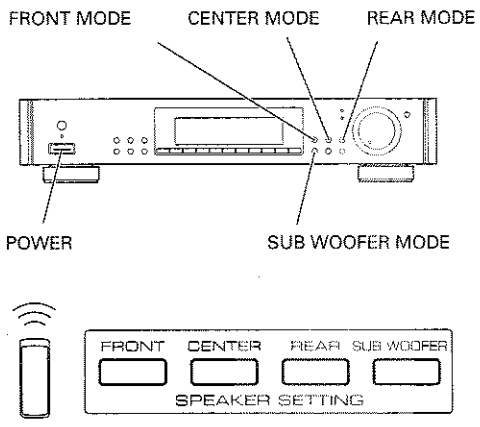
⑩ SUB WOOFER LEVEL buttons
Adjust sub-woofer volume level.

⑪ SUPER BASS on/off button

⑫ MASTER VOLUME (+, −) buttons
Control overall volume level.

⑬ SPEAKER SETTING buttons
Use to set the size of the speaker for each channel and whether speakers are connected or not. (Refer to page 34.)

Operations indicated by the [ ] mark are performed with the remote control unit.



1 SETTING THE SPEAKER MODE

Sets whether speakers are connected or not, and if connected, their size.

1. Switch on the power to this unit.

If this unit's power switch is ON and the power cord is connected to an amplifier's switched power outlet, the power to the unit can be switched on and off with the amplifier's power ON/OFF switch.

2. Use the speaker setting buttons to set the speaker mode to match the connected speakers.

LARGE : When using speakers capable of reproducing frequencies in the 100 Hz or below range.

SMALL : When using small speakers that cannot reproduce frequencies in the 100 Hz or below range.

FRONT MODE — Selects the size of the front L, R speakers.

LARGE ↔ SMALL

CENTER MODE — Selects center speaker size, or NONE if no center speaker is used.

→ LARGE → SMALL → NONE →

REAR MODE — Selects the size and number (1 or 2) of rear speakers, or NONE if no rear speakers are used.

→ LARGE (x 2) → SMALL (x 2) →
NONE ← SMALL (x 1) ← LARGE (x 1) ←

Indicator display with speaker settings

Mode	Display	
FRONT MODE	(LARGE) L R	(SMALL) L R
CENTER MODE	(LARGE) C	(SMALL) C
REAR MODE	(LARGE×2) Ls Rs	(SMALL×2) Ls Rs
	(LARGE×1) S	(SMALL×1) S

SUB WOOFER MODE — Selects whether there is a sub-woofer or not.

① **(DOLBY SURROUND AC-3)**

NONE ⟶ MODE 1 (Sub-woofer output only) ⟶ MODE 2 (Sub-woofer output + Left, Center, Right channel bass) ⟲

② **(During operation of a mode other than AC-3)**

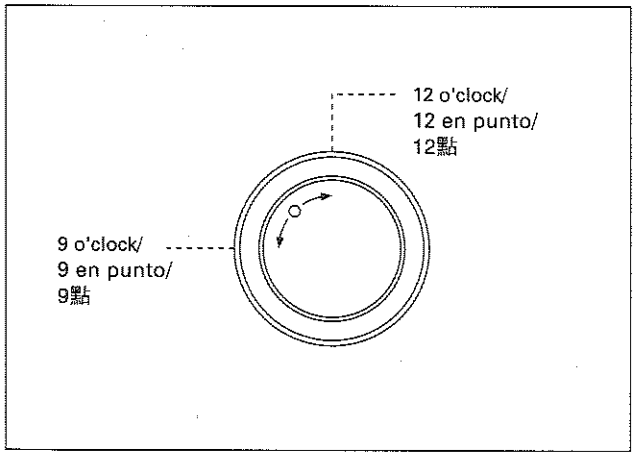
USE (Left, Center, Right channel bass) ⟷ NONE

During Pro Logic reproduction, this unit does not let you switch between NORMAL, WIDE, and PHANTOM center mode settings. However, setting the SPEAKER MODE as follows provides the same effects as these modes.

Front	Center		
LARGE	SMALL	➡	NORMAL
LARGE	LARGE	➡	WIDE
LARGE	NONE	➡	PHANTOM

Set the rear speaker to NONE for conventional 3CH Logic reproduction.

NOTE:
This unit lets you memorize Sub-woofer mode settings for each surround/SFC mode. So after setting the desired settings for each mode, you can store them for use later.

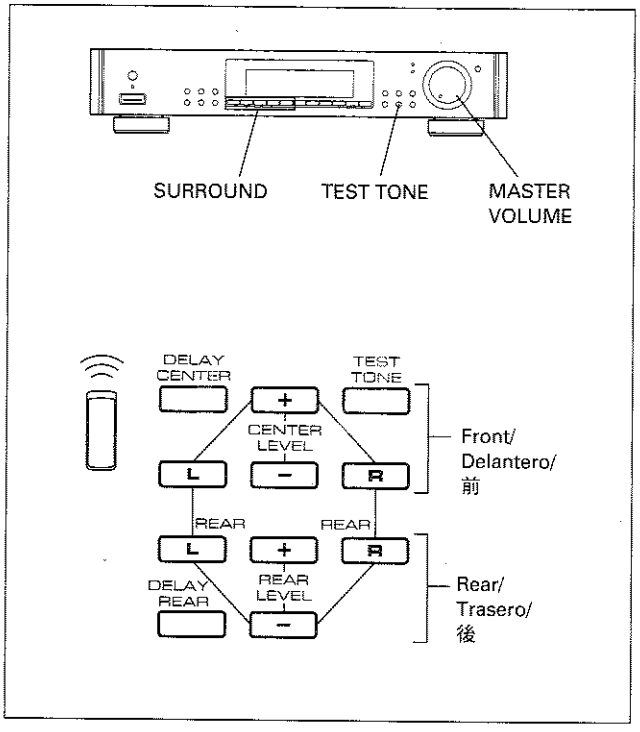


2 CONNECTED COMPONENT SETTING

1. Switch on the power to the amplifier and the other components in your system.

2. Lowering the Unit's Output Level
Turn down the MASTER VOLUME knob (counterclockwise).

3. Put the volume control knobs of all the amplifiers in the usual listening position.
The volume knobs should be set between 9 and 12 o'clock.



3 LEVEL AND BALANCE ADJUSTMENT

Adjusts the volume level and balance of each channel (speaker). While listening to the test tone from your listening position, adjust until volume levels of each speaker are the same.

1. Select the desired mode with the Surround/SFC Mode button.

2. Press the TEST TONE*4 button to switch on.
The test tone signal is output through each channel in turn.

3. Raise the MASTER VOLUME.

4. While listening to the test tone, adjust balance level.

MASTER BALANCE (L, R)
- Adjust the system's overall left/right volume level balance.
- Press L and the right channel's volume level decreases.
- Press R and the left channel's volume level decreases.

REAR BALANCE (REAR L, REAR R)
- Adjust rear channel left/right volume level balance.
- Press L and the right rear channel's volume level decreases.
- Press R and the left rear channel's volume level decreases.

CENTER LEVEL (−, +)
- Adjust center channel volume level.
- Press − to lower volume, press + to raise volume.

REAR LEVEL (−, +)
- Adjust rear channel volume level.
- Press − to lower volume, press + to raise volume.

NOTE:
The test tone is not output through the sub-woofer channel. Adjust sub-woofer volume level while listening to playback of an actual source. (Refer to pages 42–47.)

5. When you have finished adjusting, press the TEST TONE button to switch the test tone off.

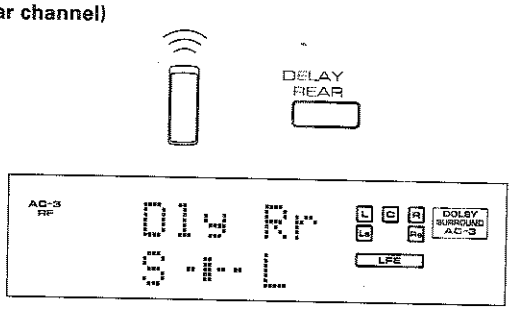
Note concerning BALANCE:
This unit's BALANCE buttons let you adjust left and right balance within a range of 10 dB.

*4 Points concerning the TEST TONE:
- If the speaker mode is "NONE", there is no sound from the set speaker.
- It does not operate if "SUR.OFF" is selected with the TEST TONE button. (Except LINE 2.)

4 DELAY TIME ADJUSTMENT

Adjusts center and rear delay time to the optimum levels for the speaker setup.
It is possible to adjust the delay time when the Dolby Surround AC-3 or Dolby Pro Logic Surround is on.

(Rear channel)



- The above positions are standard. This is with the listening position located the same distance from the front speakers and the rear speakers.
- When the distance from the rear speakers is less, set the delay time to L (Long). When the distance is more, set the delay time to S (Short).

Delay time variation of the rear channel

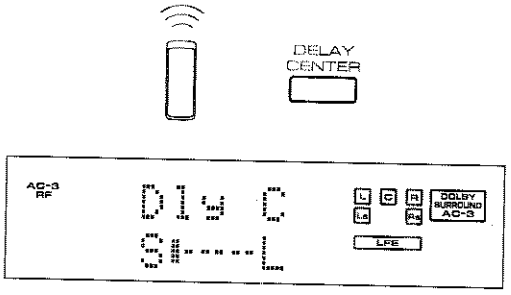
Dolby surround AC-3:

0 ms → 5 ms → 10 ms → 15 ms

Dolby Pro Logic surround:

15 ms → 20 ms → 25 ms → 30 ms

(Center channel)



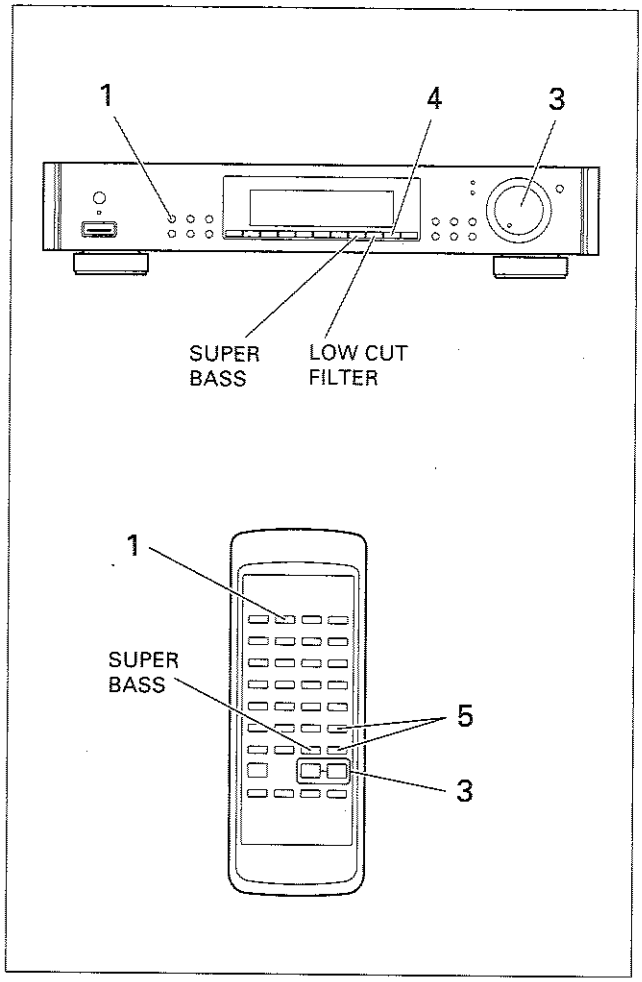
When the front L and R speakers are widely separated, adjust center channel delay time to L (Long) so that the center speaker appears to be the same distance away.

Delay time variation of the center channel

0 ms → 1 ms → 2 ms → 3 ms → 4 ms → 5 ms

NOTE:
This unit lets you memorize level, balance, effect, and delay settings for each surround/SFC mode. By setting level, balance, effect, and delay levels for each mode, you can create original sound fields.

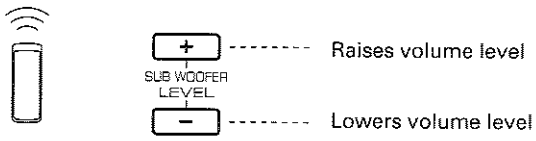
Operations indicated by the [ ] mark are performed with the remote control unit.



PLAYING DOLBY SURROUND AC-3 SOFTWARE

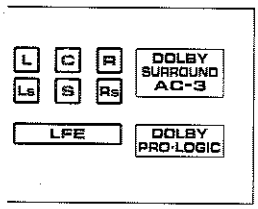
(Software bearing the DOLBY SURROUND DIGITAL mark).

1. **Press the AC-3 RF input selector button.**
2. **Start play.**
3. **Adjust volume level.**
4. **Adjust the LFE channel attenuation level with the LFE MODE button.**
5. **Adjust sub-woofer volume level with the SUB WOOFER LEVEL [+], [−] buttons on the remote control.**
   Adjust volume to the desired level while listening to playback of an actual source.



[Program Audio Format Indicators]

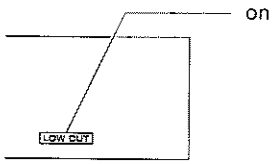
These indicators light in the display section to show audio channels set in the software.
With software that has an LFE channel set, the LFE indicator also lights, but the frame indication lights or goes out depending on whether there is a signal or not.



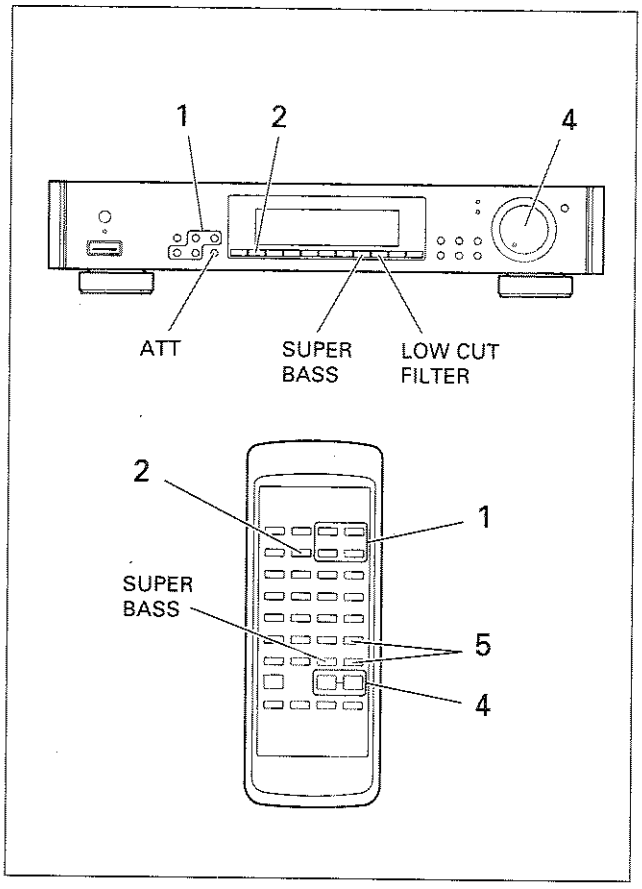
During playback with Dolby Pro Logic Surround, one of the audio formats, the DOLBY PRO LOGIC indicator lights and the DOLBY SURROUND AC-3 indicator goes out.

[Bass adjustment]

When bass is weak:
Switch SUPER BASS on.
When sub-woofer bass is strong:
Press the LOW CUT FILTER button. This cuts frequencies of 40 Hz and below for more comfortable listening.



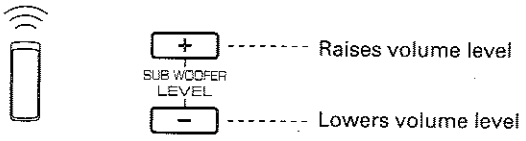
You can add SFC effects to surround playback. (See page 46.)



PLAYING DOLBY SURROUND SOFTWARE

(Software bearing the DOLBY SURROUND mark).

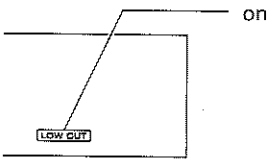
1. **Select input with the input selector buttons.**
   If the component selected for input to this unit is connected to an amplifier, select that component for play with the amplifier's function switch.
2. **Press the PRO LOGIC*5 button.**
3. **Start play.**
4. **Adjust volume level.**
5. **Adjust sub-woofer volume level with the SUB WOOFER LEVEL [+], [−] buttons on the remote control.**
   Adjust volume to the desired level while listening to playback of an actual source.



*5 Because Dolby Pro Logic Surround is automatically selected during AC-3 operation, the PRO LOGIC button does not operate.

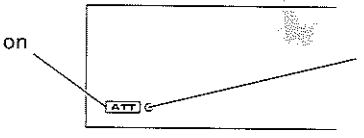
[Bass adjustment]

When bass is weak:
Switch SUPER BASS on.
When sub-woofer bass is strong:
Press the LOW CUT FILTER button. This cuts frequencies of 40 Hz and below for more comfortable listening.

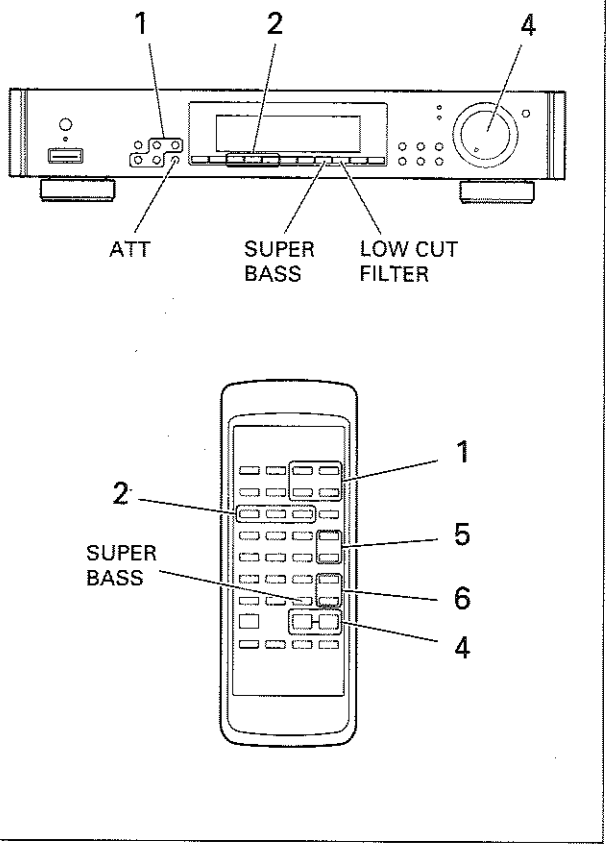


[When LINE 1 or 2 is selected, if the overload indicator lights]

Press the ATT button.

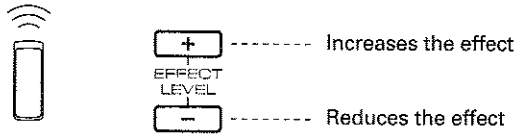


You can add SFC effects to surround playback. (See page 46.)

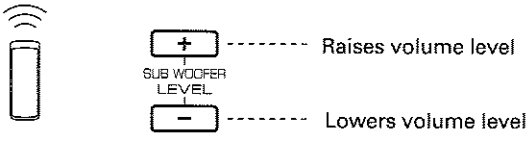


PLAYING SOURCES (SFC PLAYBACK) OTHER THAN DOLBY SURROUND STEREO SOURCES

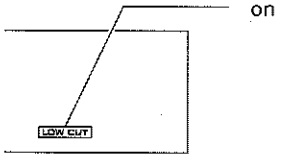
1. **Select input with the input selector buttons.**
   If the component selected for input to this unit is connected to an amplifier, select that component for play with the amplifier's function switch.
2. **Select THEATER 1 or THEATER 2, or HALL with the surround/SFC buttons.**
   With video software, select THEATER 1 or THEATER 2 for optimum effect. For music software, select HALL.
3. **Start play.**
4. **Adjust volume level.**
5. **Adjust SFC effect level with the EFFECT LEVEL [+], [−] buttons on the remote control.**



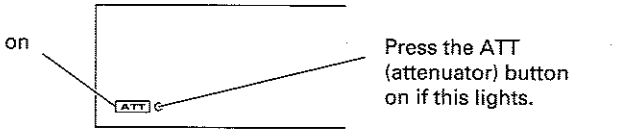
6. **Adjust sub-woofer volume level with the SUB WOOFER LEVEL [+], [−] buttons on the remote control.**
   Adjust volume to the desired level while listening to playback of an actual source.



[Bass adjustment]
When bass is weak:
Switch SUPER BASS on.
When sub-woofer bass is strong:
Press the LOW CUT FILTER button. This cuts frequencies of 40 Hz and below for more comfortable listening.



[When LINE 1 or 2 is selected, if the overload indicator lights]
Press the ATT button.



TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
Power does not come on.	• The power cord plug is not properly plugged into the power outlet. • The power cord plug is plugged into the amplifier but there is no power from the amplifier.	• Carefully plug the power cord into the wall outlet. • Switch on the power to the amplifier.
When power is switched ON, the unit automatically switches OFF.	• The temperature inside the unit is high.	• Wait a few minutes and switch power ON once more.
No sound.	• The MASTER VOLUME is turned all the way to the left. • Incorrect connection of speaker cords or amplifier. • Connecting cord jacks are not firmly inserted or are loose, or the connections are wrong. • The jacks or cord pin plugs are dirty. • Incorrect operation of the amplifier's volume control, muting, speaker switches, etc. • Muting is on. • When DIGITAL 1 or 2 is selected during P.C.M. input and Dolby AC-3 is selected. (Or during AC-3 input, the unit is not set to Dolby AC-3.) • When playing a non AC-3 disc on a LaserDisc player, the input function is set to AC-3/RF.	• Turn the knob to the right for the desired volume level. • Connect correctly. • Check connections. • Clean jacks and pin plugs. • Refer to the amplifier's instruction manual. • Press the MUTING button to cancel muting. • Press the AC-3 button to select a setting other than AC-3. (Or set the unit to AC-3 during AC-3 input.) • Set the connected input function for output other than AC-3.
The sound is distorted.	• The main unit's MASTER VOLUME is adjusted too high and the amplifier's volume is too low. • Speaker mode setting is incorrect.	• When the main unit is connected to an integrated amplifier, the MASTER VOLUME on the main unit should be set to a position less than 12 o'clock. • Confirm that settings match the specifications of your speaker setup, such as speaker size, and whether speakers are connected.
No sound from one speaker.	• The connecting cord or speaker cord is disconnected. • Incorrect balance adjustment.	• Check connections. • Return to the center position.
No sound from the center speaker.	• The Center Mode is set to NONE in the Speaker Mode settings. • You are listening with SUR.OFF. • You have selected LINE 2, and only L, R inputs are connected during SFC operation.	• Set to Large or Small to match the size of the speakers connected. • During SUR.OFF operation, there is no output from the center channel. • Connect to the center channel input.

Symptom	Cause	Remedy
No sound from the rear speakers.	●The Rear Mode is set to NONE in the Speaker Mode settings. ●When setting the rear mode to LARGE (x1) or SMALL (x1), the rear speaker is connected to Rear R.	●Select Large or Small x 2 or 1 to match the size and number of speakers connected. ●Connect to Rear L.
No sound from the sub-woofer.	●The Sub-woofer Mode is set to NONE in the Speaker Mode settings. ●During AC-3 operation, the sub-woofer mode is set to Mode 1, and the LFE Mode is set to OFF.	●Set to Mode 1, Mode 2, or Use. ●Set the LFE Mode to +10 dB or 0 dB.
Remote control operation is not possible.	●Wrong distance or angle. ●There is an obstacle between the remote control unit and the main unit. ●The batteries are dead. ●A fluorescent light is shining on the remote sensor window.	●The remote control unit will function from a maximum range of 7 meters, no more than 30 degrees off-axis from the unit's front panel. ●Remove the obstacle or change the position of the unit. ●Replace the batteries. ●Move the unit away from the fluorescent light.

- *Abnormal functioning of this unit may be caused by static electricity or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.*
- *When you use this unit with a TV or tuner at the same time, noise may be generated due to radio interference, but this will not damage the TV or this unit. To avoid this problem, it is recommended that you place this unit, the TV and the tuner as far apart as possible. The same applies to antenna cords and AC cords, which should be placed as far away as possible from any of this unit's cords.*

SPECIFICATIONS

Audio section

Input Jacks (Sensitivity/Impedance)
- LINE 1, 2 ..... 200 mV/45 kΩ
- DIGITAL 1 (COAXIAL) ..... 0.5 Vp-p/75 Ω
- AC-3 RF ..... 0.4 Vp-p/75 Ω

Output Jacks (Level/Impedance)
- FRONT, CENTER, REAR, SUB WOOFER ..... 1 V/1 kΩ

Frequency Response
- LINE 1, 2 ..... 10 Hz to 100 kHz $^{+0}_{-3}$ dB
- DIGITAL 1, 2 ..... 20 Hz to 20 kHz $^{+0}_{-3}$ dB
- AC-3 RF ..... 20 Hz to 20 kHz $^{+0}_{-3}$ dB

Total Harmonic Distortion (1 kHz) ..... 0.008 %

SN Ratio (A network)
- DIGITAL 1, 2
  - PCM full-scale input with 2V output level 20 kHz, LPF ON ... 98 dB

Miscellaneous

Power Supply Voltage ..... AC 110V/120-127 V/220-230V/240V(switchable), 50/60 Hz
Power Consumption ..... 45 W
External Dimensions ..... 440 (W) x 86 (H) x 337 (D) mm
Weight ..... 6.0 kg

Accessories

Remote Control Unit 1
Dry Cell Batteries (size AAA/R03) 2
AC-3/RF Cord 1
Operating Instructions 1

NOTE:

The above specifications and external features may change without notice, due to modifications.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays or other chemicals on or near this unit, since these will corrode the surfaces.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

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